

September 20-29, 2009

Electronic/Optical Coherence in Low Dimensional Semiconductors and Atomic Gases

Institute of Theoretical and Applied Physics, Turunc/Marmaris, Turkey

<http://itap-tthv.org>

Coherence and low temperature collective behaviour in atomic gases and semiconductors have received increasing attention within the last decade. From fundamental questions to optoelectronics applications, a multitude of research directions have managed to bring together both experimentalists and theorists.



The Mediterranean Sea and the surrounding pine forest as seen from a room in ITAP.

In September 2009, a week long workshop will be held in the Institute of Theoretical and Applied Physics (ITAP) in Turunc/Marmaris in Turkey, succeeded by a 3-day international conference (September 27-29, 2009). The aim of this organisation is to bring together leading experts on various related topics and highly motivated young researchers in a series of blackboard-style lectures on fundamental concepts, technical challenges and state-of-the-art research. Hands on training on the fundamentals will be followed by a selected set of research problems studied in exercises, tutorials, homeworks and journal club activities. The school will be geared primarily for graduate students and postdoctoral fellows but exceptional senior undergraduates are highly encouraged to attend.

We hope that this international workshop and the conference that follows will serve to enhance the productivity of young researchers as well as strengthen their grasp of the underlying physical concepts in the areas of electronic/optical coherence and collective effects at low temperatures in atomic gases and semiconductors.

Organisers:

Peter Littlewood (University of Cambridge, UK)
Mete Atature (University of Cambridge, UK)
Tugrul Hakioglu (Bilkent University and ITAP, Turkey)

For Information on Program and Registration:

Mete Atature (ma424@cam.ac.uk)
Atomic, Mesoscopic and Optical Physics Group
Cavendish Laboratory
University of Cambridge
JJ Thomson Ave, Cambridge CB3 0HE UK

Sponsors: ICAM, NSF, DPT (Turkey), UNESCO, ITAP

A Cambridge-ITAP Workshop for Young Scientists

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Topics

- Bose Einstein Condensation
- Exciton and Polariton Condensation
- BEC-BCS Crossover
- Superfluidity and Vortices in Excitonic Condensates
- Bilayer Exciton Condensates
- Coulomb Drag and Quantised Hall Drag Resistance
- Superfluidity and Vortices in Atomic Condensates
- Dipolar Quantum Gases
- Cavity QED with Atoms and Excitons
- Coupled Cavity Arrays
- Exciton and Spin Coherence in Quantum Dots

Lecturers/Speakers

- **School and Conference part:**
Mehmet Ali Alpar, Sabanci U., Turkey
Iacopo Carusotto, U. Trento, Italy
Kanti Das Gupta, U. Cambridge, UK
Zoran Hadzibabic, U. Cambridge, UK
Michael Hartmann, TU Munich, Germany
Atac Imamoglu, ETH Zurich, CH
Menderes Iskin, U. Maryland, USA
Jonathan Keeling, U. Cambridge, UK
Michael Koehl, U. Cambridge, UK
Sveatoslav Moskalenko, IAP-AS, Moldova
Ozgur Mustecaplioglu, Koc U., Turkey
Ozgur Oktel, Bilkent U., Turkey
Vittorio Pellegrini, SNS Pisa, Italy
David Snoke, U. Pittsburg, USA
Hakan Tureci, ETH Zurich, CH
Peter Littlewood, U. Cambridge, UK
Mete Atature, U. Cambridge, UK
Tugrul Hakioglu, Bilkent U., Turkey
- **Conference Part Only:**
Jeremy Baumberg, U. Cambridge, UK
Jacqueline Bloch, LPN-CNRS, France
Jim Eisenstein, CalTech, USA
Jacek Kasprzak, Cardiff U., UK
Alexey Kavokin, U. Southampton, UK
Thierry Lahaye, U. Stuttgart, Germany
Guillaume Malpuech, LASMEA, France

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Program and Social Activities

School Part (September 20-26, 2009)

Lecture timetable will be available here in July. Please check back regularly.

Free Day for the School Part (September 26, 2009)

There are a number of activities planned for the Saturday dividing the School and Conference parts of the workshop. All attendees and lecturers are encouraged to pick an activity of interest and sign up in the beginning of the school:

1) Trip to Bodrum Museum of Underwater Archeology

<http://www.bodrum-museum.com/>

2) Hiking and/or Cycling trips to nearby natural sites and turquoise bays

3) Full day blue voyage on a boat - includes snorkeling, swimming and scuba diving for those interested with guidance from United Divers Octopus

<http://www.uocephus.com>

4) A trip to Efes open air museum

<http://en.wikipedia.org/wiki/Ephesus>

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Announcements—Registration and Fees

School Part (September 20-26, 2009)

Registration forms for the Cambridge-ITAP workshop are now available online at <http://itap-tthv.org/iars>. All applicants for the school part need to fill this online form. Please click on the Application Forms link in the top menu and select TCMP as the subgroup. The deadline is August 21st, but space is limited. Do not delay your registration if you would like to attend this workshop.

Registration is free for all postdocs and students thanks to financial support from ICAM, NSF, ITAP, DPT and UNESCO. There will be substantial (if not complete) support for travel for all attending young scientists. The room and board costs EUR 35 per day for school attendees.

Conference Part (September 27-29, 2009)

The dates of the conference part is September 27-29, 2009. There is no online application form for the conference part of the workshop. Those interested in contributing a talk in the conference part of the Cambridge-ITAP workshop should send a title and summary (no more than one-page including affiliations, figures and references) to cambridge-itap@itap-tthv.org. Those who wish to attend without a contribution should send an email to the same address indicating the nights they wish to stay. For all contributing and attending participants (except students and postdocs of the school part) the conference registration fee is EUR 150 and the room and board costs EUR 70 per day. With your application, please indicate the nights you would like to stay in order to secure room booking.

Travel Information

The closest international airports are Dalaman (110 km from Turunç), and Bodrum (170 km from Turunç). Please follow the directions on the ITAP website for reaching the institute from these airports.

Workshop Programme

A schedule of the lectures and talks will be announced soon.